IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant	:	Peter Gaal, et al.		
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BRIEF ON APPEAL UNDER 37 C.F.R. § 41.37

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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Sir:

In response to the Final Office Action dated July 23, 2009 and the Advisory Action dated November 25, 2009, Appellants on January 4, 2010 requested an Appeal to consider the issues raised or maintained in the Final Office Action. Accordingly, this Brief on Appeal under 37 C.F.R. §41.37 is being filed.

The fees required under § 41.20(b)(2) should be charged to Deposit Account No. 17-0026.

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I. Real Party in Interest

The real party in interest in this appeal is QUALCOMM Incorporated, 5775 Morehouse Drive, San Diego, California, 92121.

II. Related Appeals and Interferences

To the best of Appellants' knowledge, there are no other previous or pending appeals of this Application, or patent interference proceedings, or judicial proceedings which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision of this Appeal.

III. Status of Claims

Claims 1-31 and 37-43 are on Appeal, with claims 1, 7, 14, 19, 25, 32 and 37-41 being independent.

1. Claims cancelled: none.
2. Claims withdrawn from consideration but not cancelled: 32-36
3. Claims pending: 1-31 and 37-43
4. Claims allowed: none
5. Claims rejected: 1-31 and 37-43

IV. Status of Amendments

Each of claims 1, 7, 14, 19, 25, 32 and 37-41 were amended in the May 7, 2009 Amendment responsive. The above-noted Amendments were considered by the Examiner in the July 23, 2009 Final Office Action. No additional Amendments were added in the response

filed by the Appellants on October 27, 2009. Accordingly, there are no un-entered amendments.

V. Summary of the Claimed Subject Matter

Independent claim 1 is directed to a method of communications, including allocating a first code to a first subscriber station, assigning a first sub-code derived from the first code to support a dedicated channel to the first subscriber station **(e.g., see FIG. 5, [0037], "The dedicated Walsh code for the subscriber station in this example is designated $(W_{512,1})_1$, where the index $(\ )_1$ means a first one on the 64 full rate Walsh codes", also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, assigning a second code to support a dedicated channel to a second subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)** and assigning a second sub-code derived from the first code to support a supplemental channel to the second subscriber station **(e.g., see FIG. 5, [0035], "Once the Walsh code assignments have been made to those subscriber stations in soft handoff, the leftover Walsh code space may be opportunistically assigned to the remaining subscriber stations", and [0037], "...unused Walsh codes from a full rate Walsh code allocated to a subscriber station in soft handoff may be assigned to support supplemental forward link traffic channels", also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to the first code **(e.g., see FIG. 5, whereby lower-branches of the Walsh code tree support lower data rates than higher branches, and dedicated channels, and [0042], "The low rate Walsh codes may be used by the subscriber stations in the good geometry group to support dedicated forward link traffic channels", also see Table**

2 in [0037] that shows different sub-codes of Walsh codes that can support different data rates,).

Independent claim 7 is directed to a method of communications, including separating **(e.g., see 702 of FIG. 7 and/or 802 of FIG. 8)** a plurality of subscriber stations into first and second groups, allocating a different first code from a plurality of orthogonal codes to each of the subscriber stations in the first group **(e.g., see 706 of FIG. 7 and/or 806 of FIG. 8)**, assigning each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code **(e.g., see 706 of FIG. 7 and/or 806 of FIG. 8)**, to support a dedicated channel and assigning a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group **(e.g., see 708, 710 and/or 712 of FIG. 7 and/or 808, 810 and/or 812 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

Independent claim 14 is directed to a method of communications, including receiving information from a base station **(e.g., 108a/b/c of FIG. 1 or FIG. 6)** including a first code **(e.g., see 702 of FIG. 7 and/or 802 of FIG. 8)**, searching through the first code to locate a sub-code **(e.g., see [0078], "The full rate Walsh code identified from the extension indicator may be searched by the demodulator to find the appropriate Walsh codes")**, despreading a supplemental channel from the base station with the sub-code, despreading a dedicated channel from the base station with a second code and combining communications on the dedicated and supplemental channels **(e.g., e.g., [0078], "For each of these Walsh codes, the de-spread baseband signal may be provided to the decoder 622. If the CRC check function is valid for the baseband signal, this means that a supplemental forward link traffic channel has been detected. This process continues until all the Walsh codes**

are searched. The payload portions from each of the dedicated and supplemental forward link traffic channels may then be combined and provided to the vocoder 624"), wherein the sub-code is restricted to lower data-rate transmissions as compared to the first code (**e.g., see FIG. 5, Table 2 of [0037], [0042]**).

Independent claim 19 is directed to a communications station (**e.g., 108a/b/c of FIG. 1 or FIG. 6**), including a processor (**e.g., 606 of FIG. 6**) configured to allocate a first code to a first subscriber station (**e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8**), assign a first sub-code derived from the first code to support a dedicated channel to the first subscriber station (**e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8**), assign a second code to support a dedicated channel to a second subscriber station (**e.g., see FIG. 5, [0035], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8**), and assign a second sub-code derived from the first code to support a supplemental channel to the second subscriber station (**e.g., see FIG. 5, [0035], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8**), wherein the first and second sub-codes are restricted to lower data-rate transmission as compared to the first code (**e.g., see FIG. 5, Table 2 of [0037], [0042]**).

Independent claim 25 is directed to a communications station (**e.g., 108a/b/c of FIG. 1 or FIG. 6**), including a processor (**e.g., 606 of FIG. 6**) configured to separate (**e.g., see 702 of FIG. 7 and/or 802 of FIG. 8**) a plurality of subscriber stations into first and second groups, allocate a different first code from a plurality of orthogonal codes to each of the subscriber stations in the first group (**e.g., see 706 of FIG. 7 and/or 806 of FIG. 8**), assign each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code (**e.g., see 706 of FIG. 7 and/or 806 of FIG. 8**), to support a dedicated channel, and assign a second sub-code derived from one of the first codes to support

a communications channel to one of the subscriber stations in the second group **(e.g., see 708, 710 and/or 712 of FIG. 7 and/or 808, 810 and/or 812 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

Independent claim 37 is directed to a communications station **(e.g., 108a/b/c of FIG. 1 or FIG. 6)**, including means **(e.g., 606 of FIG. 6)**for allocating a first code to a first subscriber station, means **(e.g., 606 of FIG. 6)** for assigning a first sub-code derived from the first code to support a dedicated channel to the first subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, means **(e.g., 606 of FIG. 6)** for assigning a second code to support a dedicated channel to a second subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)** and means **(e.g., 606 of FIG. 6)** for assigning a second sub-code derived from the first code to support a supplemental channel to the second subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to the first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

Independent claim 38 is directed to a communications station **(e.g., 108a/b/c of FIG. 1 or FIG. 6)**, including means **(e.g., 606 of FIG. 6)** for separating **(e.g., see 702 of FIG. 7 and/or 802 of FIG. 8)** a plurality of subscriber stations into first and second groups, means **(e.g., 606 of FIG. 6)** for allocating **(e.g., see 706 of FIG. 7 and/or 806 of FIG. 8)** a different first code from a plurality of orthogonal codes to each of the subscriber stations in the first group, means **(e.g., 606 of FIG. 6)** for assigning **(e.g., see 706 of FIG. 7 and/or 806 of FIG. 8)** each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel and means **(e.g., 606**

of FIG. 6) for assigning a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group **(e.g., see 708, 710 and/or 712 of FIG. 7 and/or 808, 810 and/or 812 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

Independent claim 39 is directed to a computer-readable medium **(e.g., see [0080], "RAM memory, flash memory, ROM memory, EPROM memory, EEPROM memory, registers, hard disk, a removable disk, a CD-ROM, or any other form of storage medium known in the art")** including program code stored thereon, which, when executed by a machine **(e.g., 108a/b/c of FIG. 1 or FIG. 6)**, cause the machine to perform actions, the program code including program code to allocate a first code to a first subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, program code to assign first sub-code derived from the first code to support a dedicated channel to the first subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, program code to assign a second code to support a dedicated channel to a second subscriber station and program code to assign a second sub-code derived from the first code to support a supplemental channel to the second subscriber station **(e.g., see FIG. 5, [0037], also see 706-718 of FIG. 7 and/or 806-818 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmission as compared to the first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

Independent claim 40 is directed to a computer-readable medium **(e.g., see [0080])** including program code stored thereon, which, when executed by a machine **(e.g., 108a/b/c of FIG. 1 or FIG. 6)**, cause the machine to perform actions, the program code including program code to separate **(e.g., see 702 of FIG. 7 and/or 802 of FIG. 8)** a plurality of

subscriber stations into first and second groups, program code to allocate **(e.g., see 706 of FIG. 7 and/or 806 of FIG. 8)** a different first code from plurality of orthogonal codes to each of the subscriber stations in the first group, program code to assign **(e.g., see 706 of FIG. 7 and/or 806 of FIG. 8)** each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel and program code to assign a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group **(e.g., see 708, 710 and/or 712 of FIG. 7 and/or 808, 810 and/or 812 of FIG. 8)**, wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

Independent claim 41 is directed to a computer-readable medium **(e.g., see [0080])** including program code stored thereon, which, when executed by a machine **(e.g., 104 of FIG. 1 or FIG. 6)**, cause the machine to perform actions, the program code including program code to receive information **(e.g., see 702 of FIG. 7 and/or 802 of FIG. 8)** from a base station **(e.g., 108a/b/c of FIG. 1 or FIG. 6)** comprising a first code, program code to search **(e.g., see [0078])** through the first code to locate a sub-code, program code to despread **(e.g., see [0078])** a supplemental channel from the base station with the sub-code program code to despread **(e.g., see [0078])** a dedicated channel from the base station with a second code and program code to combine **(e.g., see [0078])** communications on the dedicated and supplemental channels, wherein the sub-code is restricted to lower data-rate transmissions as compared to the first code **(e.g., see FIG. 5, Table 2 of [0037], [0042])**.

VI. Grounds of Rejection to be Reviewed on Appeal

In the September 1, 2009 Final Rejection, the Office finally rejected:

(1) Claims 1-6, 14-24, 37, 39 and 41-42 under 35 U.S.C. § 103(a) as being allegedly being unpatentable over U.S. Publication No. 2006/0120322 ("Lindskog") in view of U.S. Publication No. 2005/0250521 ("Joshi").

(2) Claims 7, 25, 38 and 40 under 35 U.S.C. § 103(a) as being allegedly being unpatentable over Lindskog in view of U.S. Patent No. 6,901,062 ("Scherzer").

(3) Claims 8-31 under 35 U.S.C. § 103(a) as being allegedly being unpatentable over Lindskog in view of Scherzer in view of Joshi.

VII. Argument

A. Regarding the rejection (1) of independent claims 1, 14, 19 and 37, 39 and 41, and/or the claims dependent thereon, under U.S.C. §103(a) over Lindskog in view of Joshi.

Below, reference is made with respect to "Walsh" codes of different rates, even though the term "Walsh" does not appear in the independent claims. The reason for this is that the Examiner reads the claimed codes and sub-codes upon Walsh codes in the applied art. Accordingly, references to Walsh codes are intended to describe the current Examiner's interpretation of the applied art, and not necessarily to a claim construction necessitated by the independent claims.

Referring to FIG. 2 of Lindskog, Lindskog illustrates a Walsh code tree where a full-rate Walsh code C11(full-rate or 1/1 = 1) has sub-codes C21 and C22 (half-rate or ½), which in turn have sub-codes C41 – C44 (quarter-rate or ¼), and so on (e.g., see [0025]-[0027] and FIG. 2 of Lindskog). Branches of the Walsh code tree on the same level correspond to orthogonal Walsh codes or sub-codes in Lindskog. Lindskog attempts to be efficient in terms of which codes or sub-codes are allocated to subscriber stations, but Lindskog does not appear to disclose or suggest allocating different codes and/or sub-codes to the same subscriber station.

Accordingly, the Appellants agree with the Examiner in that "Lindskog does not teach assigning a second sub-code derived from the first code to support a supplemental channel to

the second subscriber station", and the Examiner further generalizes this deficiency by admitting that Lindskog does not teach assigning a second channel to a single mobile station (e.g., see Page 4 of the 7/23/2009 Final Office Action). However, the Examiner cites to Joshi for allegedly curing this particular deficiency of Lindskog.

This Appeal relates to a dispute regarding the implicit teachings of Joshi, which the Appellants submit support the position that the asserted combination of Lindskog and Joshi could not function as claimed. As will be described below in more detail, the Appellants believe Joshi's teachings of FCCHs and SCCHs carried over to Lindskog's teachings related to Walsh code allocations based on a Walsh code tree would mean that a Walsh code allocated to a subscriber station for supporting supplemental code channel(s) (SCCHs) that can carry data at a data rate at a full-rate would be assigned a full-rate Walsh code. The implications of this position to the claim language are discussed in more detail below.

1. Joshi's Supplemental Code Channels (SCCHs) can transmit at a rate equal to the highest-rate of the Fundamental Code Channel (FCCH), such that the SCCHs do not appear to be "restricted to lower data-rate transmissions as compared to the first code", where the "first code" is read upon a full-rate Walsh Code from a Walsh Code tree in Lindskog.

Regarding Joshi, the Examiner cites to paragraphs [0030]-[0031], which describes that an IS-95B reverse link traffic channel 140 can be assigned to a mobile station, with the IS-95B traffic channel 140 including both a fundamental code channel (FCCH), and potentially including up to seven supplemental code channels (SCCHs) $S_0 \ldots S_6$ (e.g., see Page 4 of the 7/23/2009 Final Office Action). Thus, the Examiner's position is that the FCCH and SCCH would have their own separate Walsh codes, such that Joshi cures Lindskog's failure to show multiple Walsh codes assigned to the same subscriber station. In Joshi, the FCCH and SCCHs are characterized as follows:

> The FCCH is a variable rate channel capable of operating at data transmission rates including a full rate, a half rate, a quarter rate, and an eighth rate. On the other hand, the SCCH operates only at a full rate when data is to be transmitted, and at a zero rate when no data is available.
>
> *(e.g., see [0005] of Joshi)*

> The FCCH is a variable rate channel capable of operating at data frame rates (also referred to herein as "rates") including an FCCH full rate, a half rate, a quarter rate, and an eighth rate. The FCCH can carry data 136 from data source 134 and signaling information. Each of the assigned SCCHs S_0-S_6 can operate at only an SCCH full rate when data is to be transmitted and at a zero rate during DTX periods when no data is available to be transmitted.
>
> *(e.g., see [0031] of Joshi)*

Thus, the FCCH carries a variable rate that can be anywhere between a full-rate and a zero-rate, whereas the SCCH can only carry the full-rate or the zero-rate. This aspect is illustrated in FIGS. 1A and 5 of Joshi. For example, Joshi states that if the FCCH includes "rates of 9600 bps (the RS1 FCCH full rate), 4800 bps, 2400 bps, or 1200 bps", then the SCCH can include "rates of 9600 bps (the RS1 SCCH full rate) or zero bps" (e.g., see [0033]-[0034] of Joshi). In another example, Joshi states that if the FCCH includes " rates of 14,000 bps, 7200 bps, 3600 bps, and 1800 bps", then the SCCH can include "SCCH rates of 14,000 bps or zero bps" (e.g., see [0036]-[0037] of Joshi).

Independent claim 1, for example, does not merely recite assigning more than one code and/or sub-code to a subscriber station for channel support, but also "wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to the first code", and independent claims 7, 14, 19, 25, 32 and 37-41 recite similar limitations. By citing to paragraphs [0030]-[0031], with respect to the claimed "second subscriber station" of claim 1, it is the Appellants' understanding that the Examiner is attempting to read the claimed "dedicated channel" and its associated code upon the FCCH and the claimed "supplemental channel" and its associated sub-code upon the SCCH(s).

Turning back to Lindskog, sub-codes on the Walsh Code tree of FIG. 2 are not capable of transmitting at a full-rate. Rather, sub-codes C21 and C22 have a highest-rate of 1/2, C41 – C44 have a highest-rate of 1/4 and C81-C88 have a highest-rate of 1/8. The only Walsh code capable of a full-rate in the Walsh code tree of Lindskog at FIG. 2 is C11. However, C11 is the full-rate Walsh code, and the allocation of C11 preempts the allocation of any sub-codes because the sub-codes overlap (i.e., are not orthogonal) to the ancestor-code or parent-code C11.

Because C11 is the only Walsh code in FIG. 2 of Walsh capable of transmitting at a full-rate, C11 would have to be assigned to the SCCH to permit the SCCH to transmit at the full-rate in the alleged combination of Lindskog and Joshi. In other words, Appellants submit that, in Joshi, because the SCCH carries data at either full-rate (e.g., 14,000 bps) or zero-rate, each SCCH would be assigned a full-rate Walsh code to support its full-rate transmissions, even when the SCCH is not actually carrying data at the full-rate.

However, the Examiner appears to read the "first code" itself on C11 from FIG. 2 of Lindskog. Under this interpretation, it is not possible for the limitation of "wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to the first code" as recited in independent claim 1 and similarly recited in independent claims 7, 14, 19, 25, 32 and 37-41 to be satisfied by the combination of Lindskog in view of Joshi.

As such, claims 2-6, 15-18, 20-24 and 42, dependent upon independent claims 1, 14, 19 and 41, respectively, are likewise allowable over Lindskog in view of Joshi at least for the reasons given above with respect to the independent claims.

2. Assigning a full-rate Walsh code (C11) to the SCCH in Joshi would preclude any sub-codes of C11 to be assigned to any other subscriber station.

If C11 from Lindskog were assigned to a subscriber station, no other sub-codes of C11 could be allocated or assigned to any other subscriber stations. Thus, no sub-codes derived from C11 would be available for assignment if C11 were assigned to a particular channel (i.e., SCCH). As discussed above, for the SCCH to transmit at a full-rate in Joshi, the SCCH would require a full-rate Walsh code, which in Lindskog corresponds to C11. However, the claims require a sub-code of the same code to be assigned to different channels for different subscriber stations, and one of the sub-codes is currently being read on the SCCH in Joshi. However, if C11 were assigned to SCCH, C11 is not a sub-code and no sub-code of C11 would be assigned to any other subscriber station as claimed.

Thus, the combination of Lindskog and Joshi would not be capable of achieving "assigning a first sub-code derived from the first code to support a dedicated channel to the first subscriber station" and "assigning a second sub-code derived from the first code to support a supplemental channel to the second subscriber station" (Emphasis added) as recited in independent claim 1 and similarly recited in independent claims 7, 14, 19, 25, 32 and 37-41, because (i) the Examiner reads the claimed "second sub-code" as the code assigned to the SCCH in Joshi, (ii) a full-rate Walsh code appears to be assigned to the SCCH in Joshi because the SCCH is capable of transmitting at a full-rate and (iii) a full-rate Walsh code precludes the assignment of any sub-codes in Lindskog such that dedicated channel to the first subscriber station would not be capable of being assigned the first sub-code as claimed.

As such, claims 2-6, 15-18, 20-24 and 42, dependent upon independent claims 1, 14, 19 and 41, respectively, are likewise allowable over Lindskog in view of Joshi at least for the reasons given above with respect to the independent claims.

3. Assigning a full-rate Walsh code (C11) to the SCCH in Joshi would preclude any sub-codes of C11 to be assigned to any other subscriber station.

Independent claim 14 recites "combining communications on the dedicated and supplemental channels", with similar limitations present in independent claim 41. As noted above, the Examiner reads the "dedicated and supplemental channels" upon the FCCH and SCCH in Joshi. However, it is unclear where Joshi teaches combining communications on these different channels. It is entirely possible that data could be transmitted separately on the FCCH and SCCH without being combined.

The above-noted claim limitation reads at least upon "[i]f the subscriber station 104 is engaged in soft handoff, then it may combine communications from the various base stations during the decoding process to increase processing gain" and "[t]he payload portions from each of the dedicated and supplemental forward link traffic channels may then be combined and provided to the vocoder 624" (e.g., see [0076] and [0078] of the application on appeal). No such teaching appears to be present in Lindskog and/or Joshi.

Appellants further note that the "combining" limitation has not been addressed by the Examiner in the 7/23/2009 Final Office Action (e.g., 5-7 of the 7/23/2009 Final Office Action, which appear to discuss claims 14 and 41 but do not appear to refer to the "combining" limitation).

Accordingly, independent claims 14 and 41 are allowable for at least this additional reason.

4. Remarks related to the Examiner's response to the above-noted arguments.

In the Advisory Action of 11/25/2009, the Examiner states:

> The applicant is focused on the channels being of a certain capability of rates. The supplemental channels are variable rate channels which include multiple rates aside from a full rate.
>
> *(e.g., see Page 2 of 11/25/2009 Advisory Action)*

This is a mischaracterization of Joshi, which states:

> Each of the assigned SCCHs S_0-S_6 can operate at only an SCCH full rate when data is to be transmitted and at a zero rate during DTX periods when no data is available to be transmitted.
>
> *(e.g., see [0031] of Joshi)*

The SCCH cannot operate at "multiple rates aside from a full rate", but only the zero-rate (i.e., no transmission).

The Examiner further states that "it would be obvious to one of ordinary skill in the art that a variable rate channel would be capable of a rate as described in Lindskog without deviating or changing the operation of the channels in Joshi as they are capable of the rates discussed as being used by Lindskog" (e.g., see Page 2 of the 11/25/2009 Advisory Action. The Appellants respectfully disagree with this statement.

The SCCH of Joshi transmits either at a full-rate or a zero-rate. For this reason, assigning a half-rate, quarter-rate, or eighth-rate Walsh code from the Walsh code tree in FIG. 2 of Lindskog would be pointless since this Walsh code would be (i) incapable of permitting full-rate transmission and (ii) not required for a zero-rate transmission. The Examiner states that the "sub-codes in the tree-structure of Fig. 2 are used as needed", but has not established how the sub-codes in Lindskog's FIG. 2 could permit the SCCH to transmit at the full-rate, when the sub-codes are clearly configured to provide fractional frame-rates (e.g., see Page 3 of the 11/25/2009 Advisory Action).

The Examiner conclusion that "a sub-code restricted to a lower rate than the FCCH could be used to support the SCCHs" is thereby incorrect, because the SCCH could not transmit at the full-rate with this Walsh code. Again, the Examiner's statement appears to

contradict Joshi's statement that "[e]ach of the assigned SCCHs S_0-S_6 can operate at only an SCCH full rate when data is to be transmitted" (e.g., see [0031] of Joshi).

B. Regarding the rejection (2) of independent claims 7, 25, 38 and 40 and 41 under U.S.C. §103(a) over Lindskog in view of Scherzer in view of Joshi.

The Examiner cites to Scherzer to cure an admitted deficiency of Linskog and Joshi to disclose building groups of subscriber stations for resource-allocation. The cited section of Scherzer at Col. 9, lines 33-35 describes separating subscriber stations into M groups and only transmitting to one of the M groups at a given time to reduce downlink interference. However, Scherzer, like Lindskog and Joshi, also fails to disclose or suggest "wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code" as recited in independent claim 7 and similarly recited in independent claims 25, 38 and 40.

Scherzer also provides no rationale for how a full-rate Walsh code could be assigned the Joshi's SCCH while a sub-code of the full-rate Walsh code would still be available for assignment to another subscriber station as in the alleged combination of Lindskog and Joshi, which means the combination of Lindskog, Scherzer and Joshi also cannot disclose or suggest "assigning each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code" and then "assigning a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group" as recited in independent claim 7 and similarly recited in independent claims 25, 38 and 40.

Appellants respectfully request that the Board of Appeals withdraw this art grounds of rejection.

C. Regarding the rejection (3) of independent claims 7, 14, 19 and 25, and/or the claims dependent thereon, under U.S.C. §103(a) over Lindskog in view of Scherzer in view of Joshi.

1. Independent claims 1, 7, 14, 19 and 25 are allowable over the combination of Lindskog, Scherzer and Joshi.

For reasons discussed in the preceding sections, independent claims 1, 7, 14, 19, 25 are each allowable over the combination of Lindskog and Joshi, and/or Lindskog and Scherzer. For the same reasons, the larger combination of Lindskog, Joshi and Scherzer has the same deficiencies as noted above with respect to the combinations of Lindskog with Joshi or Scherzer individually.

As such, claims 2-7, 8-13, 15-18, 20-24 and 26-31, dependent upon independent claims 1, 7, 14, 19 and 25, respectively, are likewise allowable over Lindskog in view of Scherzer in further view of Joshi at least for the reasons given above with respect to the independent claims.

Appellants respectfully request that the Board of Appeals withdraw this art grounds of rejection.

2. Additional reasons for depending claim 29 being allowable over the combination of Lindskog, Scherzer and Joshi.

Claim 29 recites "wherein the processor is further configured to receive information indicating whether each of the subscriber stations are in soft handoff, and separate the subscriber stations by placing the subscriber stations in soft handoff in the first group and the subscriber stations that are not in soft handoff in the second group". With respect to the "first group", independent claim 25 recites that each subscriber station in the first group is allocated "a different first code from a plurality of orthogonal codes to each of the subscriber stations in

the first group, assign each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel", and then any remaining or un-allocated sub-codes from the first codes to the "second group". In other words, subscriber stations in soft handoff are first allocated code-space, with any leftover or remaining code-space (e.g., Walsh codes) being allocated to subscriber stations that are not in soft-handoff. For example, Paragraph [0035] of the Specification states "[o]nce the Walsh code assignments have been made to those subscriber stations in soft handoff, the leftover Walsh code space may be opportunistically assigned to the remaining subscriber stations". The Examiner's comments related to claim 29 do not appear to appreciate that the handoff-status of the subscriber stations is affects their respective code allocations in the manner described above. The Examiner simply states that

> ... it is obvious to one of ordinary skill in the art that in a communication system any time there can be a mobile station in soft hand off and one in not soft handoff. There can also be none in soft handoff. The allocation of a code to a mobile in soft-handoff would only constitute holding the resource in the first cell for additional time. (Para 65) *(e.g., see Page 10 of the Office Action)*

The above-excerpt simply represents well-known information related to soft-handoffs in a wireless system, but does not actually address the claim language that indicates that the code-allocations to subscriber stations is based on their handoff status, specifically such that mobiles in soft handoff are allocated either a full-rate code or sub-code, while mobiles not in soft hand-off are allocated sub-codes corresponding to un-used portions from the code allocations to the soft-handoff mobiles.

In the 11/25/2009 Advisory Action, the Examiner stated that a base station would allocate a new channel to a mobile when the mobile enters soft handoff. However, this statement, even if true, does not explain why the communications station of claim 25 would group the subscriber stations based on their soft handoff status, or why the mobile stations

that are not in soft-handoff in the second group would be allocated a code-portion from a code that is partially assigned to a mobile in soft-handoff.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

IX. EVIDENCE

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Office is being submitted.

X. RELATED PROCEEDINGS

No related proceedings are referenced in Section II, above.

XI. CONCLUSION

Appellants respectfully submit that claims 1-31 and 37-42 are patentable over the applied art and that all of the rejections and objections of record should be reversed.

Deposit Account Authorization

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 17-0026 for any additional fees required under 37 C.F.R. § 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

Dated: February 22, 2010

By: _____
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Attachment(s):

APPENDIX A: CLAIMS

1. (Previously Presented) A method of communications, comprising:

allocating a first code to a first subscriber station;

assigning a first sub-code derived from the first code to support a dedicated channel to the first subscriber station;

assigning a second code to support a dedicated channel to a second subscriber station; and

assigning a second sub-code derived from the first code to support a supplemental channel to the second subscriber station,

wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to the first code.

2. (Original) The method of claim 1 further comprising assigning a third sub-code derived from the first code to support a second supplemental channel to the second subscriber station.

3. (Original) The method of claim 1 wherein the first subscriber station is in soft handoff and the second subscriber station is not in soft handoff.

4. (Original) The method of claim 1 further comprising separating communications to the second subscriber station into first and second portions, spreading the first portion of the communications with the second code, and spreading the second portion of the communications with the second sub-code.

5. (Original) The method of claim 1 wherein the first sub-code comprises a plurality of concatenated copies of the first code.

6. (Original) The method of claim 1 further comprising signaling to the second subscriber station the first code.

7. (Previously Presented) A method of communications, comprising:

separating a plurality of subscriber stations into first and second groups;

allocating a different first code from a plurality of orthogonal codes to each of the subscriber stations in the first group;

assigning each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel; and

assigning a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group,

wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code.

8. (Original) The method of claim 7 further comprising assigning a second code to support a dedicated channel to said one of the subscriber stations in the second group, and wherein the communications channel comprises a supplemental channel to support overflow communications not supported by the dedicated channel.

9. (Original) The method of claim 8 further comprising separating communications to said one of the subscriber stations in the second group into first and second portions, spreading the first portion of the communications with the second code, and spreading the second portion of the communications with the second sub-code.

10. (Original) The method of claim 7 further comprising assigning a third sub-code from said one of the first codes to support a second communications channel to said one of the subscriber stations in the second group.

11. (Original) The method of claim 7 wherein the subscriber stations in the first group are in soft handoff and the subscriber stations in the second group are not in soft handoff.

12. (Original) The method of claim 7 wherein the first sub-codes each comprises a plurality of concatenated copies of its respective first code.

13. (Original) The method of claim 7 further comprising signaling to said one of the subscriber stations in the second group said one of the first codes.

14. (Previously Presented) A method of communications, comprising:

receiving information from a base station comprising a first code;

searching through the first code to locate a sub-code;

despreading a supplemental channel from the base station with the sub-code;

despreading a dedicated channel from the base station with a second code; and

combining communications on the dedicated and supplemental channels,

wherein the sub-code is restricted to lower data-rate transmissions as compared to the first code.

15. (Original) The method of claim 14 wherein the information comprises a plurality of codes including the first code.

16. (Original) The method of claim 14 wherein the information identifies the first code as containing the sub-code.

17. (Original) The method of claim 14 wherein the information is carried on the dedicated channel.

18. (Original) The method of claim 18 wherein the information is carried on an overhead channel.

19. (Previously Presented) A communications station, comprising:

a processor configured to allocate a first code to a first subscriber station, assign a first sub-code derived from the first code to support a dedicated channel to the first subscriber station, assign a second code to support a dedicated channel to a second subscriber station, and assign a second sub-code derived from the first code to support a supplemental channel to the second subscriber station,

wherein the first and second sub-codes are restricted to lower data-rate transmission as compared to the first code.

20. (Original) The communications station of claim 19 wherein the processor is further

configured to assign a third sub-code derived from the first code to support a second supplemental channel to the second subscriber station.

21. (Original) The communications station of claim 19 wherein the processor is further configured to receive information indicating that the first subscriber station is in soft handoff and that the second subscriber station is not in soft handoff, the allocation of the first code to a first subscriber station being based on the first subscriber station being in soft handoff, and the assignment of the second code to support the dedicated channel to a second subscriber station is based on the second subscriber station not being in soft handoff.

22. (Original) The communications station of claim 19 further comprising a modulator configured to separate communications to the second subscriber station into first and second portions, spread the first portion of the communications with the second code, and spread the second portion of the communications with the second sub-code.

23. (Original) The communications station of claim 19 wherein the processor is further configured to derive the first sub-code by concatenating a plurality of copies of the first code.

24. (Original) The communications station of claim 19 wherein the processor is further configured to signal to the second subscriber station the first code.

25. (Previously Presented) A communications station, comprising:

a processor configured to separate a plurality of subscriber stations into first and second groups, allocate a different first code from a plurality of orthogonal codes to each of the subscriber stations in the first group, assign each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel, and assign a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group,

wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code.

26. (Original) The communications station of claim 25 wherein the processor is further

configured to assign a second code to support a dedicated channel to said one of the subscriber stations in the second group, and wherein the communications channel comprises a supplemental channel used by the processor to support overflow communications not supported by the dedicated channel.

27. (Original) The communications station of claim 26 further comprising a modulator configured to separate communications to said one of the subscriber stations in the second group into first and second portions, spread the first portion of the communications with the second code, and spread the second portion of the communications with the second sub-code.

28. (Original) The communications station of claim 25 further comprising assigning a third sub-code from said one of the first codes to support a second communications channel to said one of the subscriber stations in the second group.

29. (Original) The communications station of claim 25 wherein the processor is further configured to receive information indicating whether each of the subscriber stations are in soft handoff, and separate the subscriber stations by placing the subscriber stations in soft handoff in the first group and the subscriber stations that are not in soft handoff in the second group.

30. (Original) The communications station of claim 25 wherein the first sub-codes each comprises a plurality of concatenated copies of its respective first code.

31. (Original) The communications station of claim 25 wherein the processor is further configured to signal to said one of the subscriber stations in the second group said one of the first codes.

32. (Withdrawn) A subscriber station, comprising:

a demodulator configured to receive information from a base station comprising a first code, search through the first code to locate a sub-code, despread a supplemental channel from the base station with the sub-code, despread a dedicated channel from the base station with a second code, and combine communications on the dedicated and supplemental channels.

33. (Withdrawn) The subscriber station of claim 32 wherein the information comprises a plurality of codes including the first code.

34. (Withdrawn) The subscriber station of claim 32 wherein the information identifies the first code as containing the sub-code.

35. (Withdrawn) The subscriber station of claim 32 wherein the information is carried on the dedicated channel.

36. (Withdrawn) The subscriber station of claim 32 wherein the information is carried on an overhead channel.

37. (Previously Presented) A communications station, comprising:

means for allocating a first code to a first subscriber station;

means for assigning a first sub-code derived from the first code to support a dedicated channel to the first subscriber station;

means for assigning a second code to support a dedicated channel to a second subscriber station; and

means for assigning a second sub-code derived from the first code to support a supplemental channel to the second subscriber station,

wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to the first code.

38. (Previously Presented) A communications station, comprising:

means for separating a plurality of subscriber stations into first and second groups;

means for allocating a different first code from a plurality of orthogonal codes to each of the subscriber stations in the first group;

means for assigning each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel; and

means for assigning a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group,

wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code.

39. (Previously Presented) A computer-readable medium including program code stored thereon, which, when executed by a machine, cause the machine to perform actions, the program code promising:

program code to allocate a first code to a first subscriber station;

program code to assign first sub-code derived from the first code to support a dedicated channel to the first subscriber station;

program code to assign a second code to support a dedicated channel to a second subscriber station; and

program code to assign a second sub-code derived from the first code to support a supplemental channel to the second subscriber station

wherein the first and second sub-codes are restricted to lower data-rate transmission as compared to the first code.

40. (Previously Presented) A computer-readable medium including program code stored thereon, which, when executed by a machine, cause the machine to perform actions, the program code promising:

program code to separate a plurality of subscriber stations into first and second groups;

program code to allocate a different first code from plurality of orthogonal codes to each of the subscriber stations in the first group;

program code to assign each of the subscriber stations in the first group either its allocated first code or a first sub-code derived from its allocated first code, to support a dedicated channel; and

program code to assign a second sub-code derived from one of the first codes to support a communications channel to one of the subscriber stations in the second group,

wherein the first and second sub-codes are restricted to lower data-rate transmissions as compared to their respective first code.

41. (Previously Presented) A computer-readable medium including program code stored thereon, which, when executed by a machine, cause the machine to perform actions, the program code promising:

program code to receive information from a base station comprising a first code;

program code to search through the first code to locate a sub-code;

program code to despread a supplemental channel from the base station with the sub-code;

program code to despread a dedicated channel from the base station with a second code; and

program code to combine communications on the dedicated and supplemental channels,

wherein the sub-code is restricted to lower data-rate transmissions as compared to the first code.

42. (Previously Presented) The method of claim 1, wherein the first code corresponds to a first Walsh code of a first length, the first and second sub-codes of the first code correspond to sub-Walsh codes of a second length, the first and second sub-codes collectively constituting the first code, and

wherein the second code corresponds to a second Walsh code of the first length.

APPENDIX B: EVIDENCE

(None)

APPENDIX C: RELATED PROCEEDINGS

(None)